Recommendations for Bulletin 160-2003

Background And Objectives

One of the desired future scenarios for the State Water Plan is a future where water conservation, water recycling and reclamation, desalinization, water transfers and similar actions referred to as "soft path" would be used as alternatives to the construction of more surface storage and the utilization of large inter basin transfers and associated increases in pumping through the Bay-Delta. The objectives of this future scenario are to apply soft path conservation measures – including a program for demand management – that would more efficiently and more cost effectively produce "new" water supply from existing supplies, would recognize the finite supply of water that is available for development through surface storage in the future, and would avoid the major environmental damages associated with conventional water development projects of the past.

With these above objectives in mind, the following recommendations have been developed which describe the management actions to be taken for this future scenario and the targeted measurable statewide goals (yield) for each action. The targeted figures have been developed primarily from the *Blueprint For An Environmentally And Economically Sound CALFED Water Supply Reliability Program.*[1] Although the *Blueprint* had CALFED as its reference point, the recommendations and data supplied in the *Blueprint* are equally applicable as recommendations for the State Water Plan and the Department of Water Resources. Each of the management actions shown below is more fully described in the *Blueprint*.

Two types of recommended actions are shown. Water management actions that produce conserved or reclaimed water are shown as Table 1 along with the potential yield in acre-feet. Organizational, institutional and implementation actions that accompany the management actions are shown as a series of recommendations following Table 1.

Conclusions

The summation of the water supply savings that can be achieved by the following Table 1 management actions indicates that approximately 5 million acre-feet of existing water supply can be potentially conserved or reclaimed. The current per capita water consumption during normal water years is approximately 0.28 acre feet per year, based on the current population of 32 million and current estimated annual urban water usage of 9 million acre feet. At this per capita rate – which can be expected to reduce under this scenario – the projected population increase of 6 million people by 2010 would require

[1] Environmental Water Caucus. Blueprint For An Environmentally And Economically Sound CALFED Water Supply Reliability Program. November 5, 1998.

1.6 million acre feet of additional water and the projected increase of 18 million by 2030 would require 5.0 million acre feet.

The major conclusion is that the amount of saved water under this scenario would be more than enough to handle the expected population for year 2010 with water left over for improved environmental flows, for reductions in Bay Delta diversions, and for the projected economic and commercial growth of the state. The potential yield of more than 5 million acre-feet would satisfy population growth out to year 2030.

Water Management Recommendations

Table 1: Recommended Water Management Actions

RECOMMENDED MANAGEMENT ACTIONS	POTENTIAL YIELD (acre-feet)
Full implementation of urban BMPs, including:	
Improved landscaping requirements	520,000
More efficient washing machines	100,000
Commercial ultra low flow toilets	200,000
Existing residential indoor BMPs above MOU-specified levels	300,000
Existing commercial, industrial and institutional BMPs above MOU-specified levels	350,000
Reclamation and recycling	1,170,000
Urban desalinization	500,000*
Urban runoff management	No yield estimate available*
Groundwater banking and management	1,000,000
Groundwater remediation and recovery	No yield estimate available*
Delta reoperation	137,000
Upper watershed restoration	No yield estimate available
Flood reservations, FERC hydropower reoperation	No yield estimate available; 400,000 to 600,000 storage
Conveyance improvements	No yield estimate available*
Irrigation efficiency	340,000
Voluntary fallowing (dry year, rotational, permanent)	420,000
Water acquisitions and transfers	Composite of irrigation efficiency, fallowing, groundwater storage and others.
Pricing incentives to manage demand, encourage conservation and reclamation	No yield estimate available*
TOTAL MEASURED POTENTIAL YIELD	**5,037,000**

* Not part of the *Blueprint* estimates.

Although the impacts of climate change on the hydrology of the state are not certain, the above management actions are applicable and perhaps more necessary with what is known of the potential impacts.

The costs for implementing the above management actions are beyond the scope of this report. However, experience with similar projects throughout the state has verified that the costs of recovered or conserved water is generally less expensive that the cost of building major new infrastructure projects. An analysis of CALFED plans for surface storage conducted for the Natural Resources Defense Council indicates that capital costs for three new or expanded reservoirs (Sites, Shasta and Los Vaqueros) to be $ 2.5 billion for an annual yield of 369,000 acre feet.[2]

Organizational, Institutional And Implementation Recommendations

Background And Conclusions

The traditional method for increasing water supplies – building more surface storage and conveyance – has inherent issues that will probably prevent any major structures or additional capacity through this medium for the foreseeable future. The reasons are many and include: the legacy of environmental damage from the existing federal and state projects, the inability to build major storage capacity additions at prices that the intended users are willing to pay, the unwillingness of the public to continue to subsidize construction of new facilities that chiefly benefit agricultural businesses, the continued ability of California's agriculture industry to grow through internal efficiencies and cropping changes even as their water supplies and acreage are lessened, the favorable economics of conserving and reusing existing supplies rather than building multi billion dollar surface storage facilities, and the willingness of the public to support public bond issues aimed at restoring habitat and conserving water supplies. That is a short list of the factors which indicate that maximizing existing supplies, managing the demand for water, and recovery of damaged ecosystems should be the major focus of the responsible state and federal agencies for the future.

Recommendations

1. The functions of planning and implementing water conservation actions and managing demand does not currently receive adequate emphasis within DWR. A staff size of approximately 20 employees dedicated to water use efficiency out of a total staff of more than 2,000 employees is an indication of this lack of emphasis. The Department of Water Resources must reorganize itself and its budgets in order to gradually accommodate new departments and staffing within

[2] Dale, Larry PhD, Natural Resources Associates. Memo to Natural Resources Defense Council, March 30, 2001.

DWR that will be responsible for water demand management and efforts to maximize existing supplies and de-emphasize the construction and engineering of major new surface storage structures. This change in orientation and staffing can be accomplished gradually and with no net increase in staffing.

2. The orientation of the State Water Plan (Bulletin 160) and of the Department of Water Resources must be modified to emphasize the efficient use of existing water supplies and the management of the demand for water. This change in orientation should be accompanied by a strong emphasis and obligation by the state on facilitating the recovery of damaged ecosystems and wildlife.

3. The Department of Water Resources adopt the above recommended water management actions (Table 1) as measurable goals for the state and the department, and assure that implementation plans are developed throughout the state, including the legal, legislative and economic requirements to assure their completion. This will require closer coordination with the actions of the California EPA, the State Water Resources Control Board and the Central Valley Project.

4. This expanded function within DWR must include actions that proactively seek out conservation opportunities throughout the state that are beneficial; the department should take an expanded role in helping local agencies initiate projects that might not otherwise be undertaken. DWR should not be in the passive role of only accepting projects initiated at the local level.

5. DWR adopt these "soft path" management actions as its committed direction for the next decade, and then near the end of that decade evaluate the success of this direction in managing the demand for water into the future.

6. The current mission statement of the Department of Water Resources – "To manage the water resources of California, in cooperation with other agencies, to benefit the state's people and protect, restore, and enhance the natural and human environments" – should be retained and the department brought in line with the recommended new emphasis that is also aligned with the current mission statement.

7. The Department of Water Resources should include in this reorientation the clearly stated recognition that ecosystems recovery and health are a vital component of the department's objectives, and although the functions are the shared responsibility of the Department of Fish and Game and the State Water Resources Control Board, DWR should assure that its conservation and demand management actions are accomplished in conjunction with these other agency actions and the ongoing CALFED Ecosystem Restoration Program, including obligations of the Public Trust and Environmental Justice and full consideration of project external costs which have not historically been included.